

In the Specification:

~~SPECIFICATION: Amendments to the Specifications begin on page 2 of this Amendment.~~

~~CLAIMS: Amendments to the Claims begin on page 6 of this Amendment.~~

~~REMARKS: Remarks begin on page 7 of this Amendment.~~

Application # 10/764,970 (Goepfert) GAU 3641
Amendment A page 2 of 8

SPECIFICATION:

~~TITLE: Replace the existing with the following new title
"Paintball gun barrel modification for cleaning during game play"~~

~~FIELD OF INVENTION: Remove para 5, which starts with the words
"Paintball is also used by law enforcement..."~~

~~FIELD OF INVENTION: Remove para 4, which starts with the words
"With this growth, paintball has become..."~~

~~FIELD OF INVENTION: Remove para 3, which starts with the words
"Paintball as an industry is marketed globally..."~~

~~FIELD OF INVENTION: Remove para 2, which starts with the words
"The sport and games of paintball..."~~

DISCUSSION OF PRIOR ART:

~~Please ADD the following text immediately before paragraph 1 of this section.~~

The sport and games of paintball are played using pneumatic powered paintball guns that shoot biodegradable gelatin capsules called paintballs. These paintballs are specifically designed to break on impact and will thus leave a mark of washable water soluble paint on its target. Paintball as a recreational sport can be played all year round, and inasmuch, has become increasingly popular nation wide. Individuals or teams play these games. Paintball in its most common form is played as a team sport where two opposing teams compete to "capture the flag." This game is won when a member of one team captures the opposing team's flag without having been marked.

Paintball as an industry is marketed globally by Internet websites, which provide news, tournament listings, on line games, and much more. Local gun shops, sporting good, and dedicated paintball stores also provide information, sell equipment, host games, sponsor teams for tournament play, and generally support paintball as an industry. In all the excitement, paintball has

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become big business.

With this growth, paintball has become highly competitive. The end goal of each player is to make as many markings as possible, and to those ends, a device that will ensure a barrel to be free from debris, and ready for firing, will provide a competitive advantage.

Paintball guns are also used by law enforcement and the military for battle like situations that also require the clearing of a paintball gun barrel during use. Though the ball contents are often not as paint like, the cleaning requirements are often the identical. Paintball contents in these applications can include (but are not limited to) pepper spray, marking inks and the like.

—continued on page 3—

DISCUSSION OF PRIOR ART: CONTINUED

Please MODIFY the following paragraph in this section as follows:

Guns, and removable barrels and barrel assemblies have been around for a substantial period of time. Paintball guns also have been available for decades. The paintballs, which are sensitive to contact due to their skin material being made of gelatin, plastic, or other extremely thin materials, are in common use today. Because sensitive skins are thin, their outer diameter will change due to manufacturing processes and environmental conditions. Typically bore bushings are used to accommodate these variations in the ball's outer diameter by adjusting the inner diameter of the barrel in those first few inches from the breech face. The contents of the paintballs can differ based on application, which can be military, law enforcement, or games. However, these are not the subjects of this invention.

"The prior art does not, at all, address the problems associated with the occurrence of rupture during the firing of paintballs." Paintballs do at times rupture yet the prior art has not addressed this occurrence to any real extent. There is but one exception, US Patent #6,295,752 (Havlock, 10/2001) where the inventor created a new barrel using equal spaced round rods or tubes held in suspension by attachment to solid rings. Unfortunately, when a barrel is manufactured using this method, it is far less stable than traditional barrels, so it will not provide a stable projectile path for the paintball to be guided. It also does no more than use gravity to expel the ruptured paintball skin and material. These are not found to be limitations in this new invention.

—continued on page 4—

~~BRIEF DESCRIPTION OF THE DRAWINGS: Removing the section starting at para 2, which starts with the words "Page 1. The preferred Embodiment of ..." to the end of this section, and replace it with the following:~~

~~FIG. 1A shows an isometric view of a first embodiment that has been modified as described here within.~~

~~FIG. 1B shows a closer view of the slots and cover that is moved to effect cleaning during game play.~~

~~FIG. 2A shows a barrel attached to a paintball gun with the cover 12 in the normal (or closed) position.~~

~~FIG. 2B shows a similar view with the cover 15 in the open (or cleaning position).~~

~~FIG. 3A shows single row large holed barrel openings~~

~~FIG. 3B shows double row large holed barrel openings~~

~~FIG. 3C shows single row large holed barrel openings~~

~~FIG. 4A shows associated cover for Fig 3A~~

~~FIG. 4B shows associated cover for Fig 3B~~

~~FIG. 4C shows another cover embodiment for use with Fig 3C~~

~~DRAWINGS Reference Numerals~~

~~10 one piece barrel with an incorporated 5" bore reducer (left side of barrel), and increased barrel inner dimension thereafter.~~

~~11 slots to hold and then exhaust paintball shell and material.~~

~~12 cover that slides to hinder exhausting of the gases in the closed position (covering slots)~~

~~13 gas exhaust holes~~

~~14 a bore reducer section of a two piece barrel~~

~~15 cover in its open (or cleaning) position for clearing paint and shell material from a ruptured paintball.~~

~~end of requested additions to BRIEF DESCRIPTION OF THE DRAWINGS~~

~~continued on page 5~~

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT:

Please MODIFY the following paragraph as follows:
"The preferred embodiment uses slots 11 as the opening form for three reasons. First, slots hold the most material given the barrel circumference. The slots in this embodiment are 1.451.83" in length and 0.13" in width. There are eight slots equally spaced around the circumference of the barrel. The paintball is 0.68" in diameter having a volume of 0.17 cubic inches. The slots and cover in this embodiment will hold 1.75 0.27 cubic inches of material. Second, slots are better suited for the removal of the paintball skin after it ruptures. Lastly, slots provide a wider tolerance of the point of impact of the ruptured ball." Further, to keep the sound level at a minimum the slots must be sized to prevent a substantial discharge of the gases used to propel the ball. For if there was no barrel the sound level would be at its maximum, and with a standard barrel the sound level is reduced by discharging the gases uniformly down the length of the barrel. To have the sound level equal to the original barrel an optional cover has been installed to resist the discharge of gases through the cleanout slots incorporated. The cover mechanism 12 works best when the two diameters (i.e. the barrel outer diameter, and the cover inner diameter) have sufficient room between them to move, and allows for a sealing device on each end. This will also leave someallows room for the contents of the paintball to accumulate. In the preferred form the two diameters leave a slight gap of roughly 0.01", and uses o rings to seal the cover. These o rings should be sized as to allow the cover to move with a very slight resistant. The open position of the cover 15 should allow the slots to be completely exposed.

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Please amend the title of the invention on page 1, line 4 as follows:

~~Paintball gun barrel modification and associated mechanism to allow for removal of ruptured paint ball material during game or other battle type operation.~~

Please amend the specification by inserting the following on page 1, between line 11 and line 12:

DISCUSSION OF PRIOR ART

Please amend the specification by inserting the following on page 3, between line 16 and line 17:

Figure 1A is a perspective view of a modified paintball gun barrel.

Figure 1B is an enlarged perspective view of a modified paintball gun barrel illustrating cleanout openings.

Figure 2A is a side view of a two-piece barrel assembly attached to a marker gun with a cleanout cover in a firing position.

Figure 2B is a side view of a two-piece barrel assembly attached to a marker gun with a cleanout cover in a cleaning position.

Figure 3A is a side view of a barrel with a single line of cleanout holes of a modified paintball gun.

Figure 3B is a side view of a barrel with a multiple pattern of cleanout holes of a modified paintball gun.

Figure 3C is a side view of a barrel with a single line of cleanout slots of a modified paintball gun.

Figure 4A is a side view of a barrel with a pivoting cleanout cover disposed over each cleanout hole of a modified paintball gun.

Figure 4B is a side view of a barrel with a rotary cleanout cover disposed over a single line of cleanout holes of a modified paintball gun.

Figure 4C is a side view of a barrel with a rotary cleanout cover disposed over a single line of cleanout slots of a modified paintball gun.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please amend the specification by amending page 3, line 17 as follows:

Page 1. The preferred Embodiment of the Cleanout design

Please amend the specification by amending page 3, line 22 as follows:

Page 2. The Cleanout openings and optional cover in normal use

Please amend the specification by amending page 4, line 1 as follows:

Page 3. Cleanout Openings

Please amend the specification by amending page 4, line 8 as follows:

Page 4. Cleanout Optional Mechanisms

In the Drawings:

Please replace the paragraph starting on page 5, line 6 with the following paragraph:

The cleanout cover mechanism 12 is best when the two diameters (i.e. the barrel outer diameter, and the cleanout cover inner diameter) have sufficient room to move, and allow for a sealing device on each end. This will also leave some room for the contents of the paintball to accumulate. In the preferred form the two diameters leave a slight gap of roughly 0.01", and uses o-rings to seal the cover. These o-rings should be sized as to allow the cleanout cover 12 to move with a very slight resistant resistance. The open cleaning position 15 of the cleanout cover 15 12 should allow the slots to be completely exposed.

Applicant argues that a figure change is no longer necessary, because the specification has been corrected and the figures no longer contain a conflict.